

**Amendments To The Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

8. (Currently Amended) A method of mutating a gene of a vertebrate animal, comprising the steps of:

- a) treating ~~a sperm~~sperms of the vertebrate animal with a psoralen derivative;
- b) irradiating the ~~sperm with UV light; and~~treated sperms with UV light to form a crosslink between a DNA double helix and the psoralen derivative;
- c) ~~subjecting the irradiated sperm to artificial fertilization.~~fertilizing eggs of the vertebrate animal with the irradiated sperms in vitro; and
- d) growing the fertilized eggs to embryos of mutant having a gene having small deletion of a plurality base pairs around the crosslinked site in a genome.

9. (Cancelled).

10. (Currently Amended) The method of claim 8, wherein the psoralen derivative is 4,5',8-trimethylpsoralen.

11. (Previously Presented) The method according to claim 10, wherein the vertebrate animal is zebrafish.

12. (Previously Presented) The method according to claim 8, wherein the mutation is introduced into a region containing a pyrimidine base.

13. (Currently Amended) A method for preparation of a mutated gene of a vertebrate animal, comprising the steps of:

- a) treating ~~a sperm~~sperms of the vertebrate animal with a psoralen derivative;
- b) irradiating the treated ~~sperms~~ with UV light to form a crosslink between a DNA double helix and the psoralen derivative; and
- c) ~~subjecting~~fertilizing an egg of the vertebrate animal with the irradiated sperm to artificial fertilization in vitro; and
- d) growing the fertilized eggs to embryos of mutant having a gene having small deletion of a plurality of base pairs around the crosslinked site in genome.

14. (Cancelled).

15. (Previously Presented) The method according to claim 13, wherein the psoralen derivative is 4,5',8-trimethylpsoralen.

16. (Previously Presented) The method according to claim 15, wherein the vertebrate animal is zebrafish.

17. (Previously Presented) The method according to claim 13, wherein the mutation is introduced into a region containing a pyrimidine base.

18. (Currently Amended) A method for analyzing a function of a gene of a vertebrate animal, comprising the steps of:

- a) treating ~~a sperm~~sperms of the vertebrate animal with a psoralen derivative;
- b) irradiating the treated ~~germ cell~~sperms with UV light to form a crosslink between a DNA double helix and the psoralen derivative;
- c) ~~subjecting~~fertilizing an egg of the vertebrate animal with the irradiated sperm to artificial fertilization in vitro;
- d) growing the fertilized eggs to a mutant having a mutated gene having a small deletion of a plurality base pairs around the crosslinked site in a genome;

d) ~~comparing phenotype of a mutant having the mutated gene~~) comparing phenotype of the mutant with that of a wild type of the vertebrate animal to find the difference of phenotype between the mutant and the wild type;

e) ~~determining~~ f) cloning the mutated gene; and

g) analyzing functions of a gene of the vertebrate animal corresponding to the mutated gene from the said differences of phenotype. difference of phenotype between the mutant and the wild type.

19. (Cancelled).

20. (Previously Presented) The method according to claim 18, wherein the psoralen derivative is 4,5',8-trimethylpsoralen.

21. (Previously Presented) The method according to claim 20, wherein the vertebrate animal is zebrafish.

22. (Currently Amended) The method according to claim 18, wherein the mutation is introduced into a region containing a pyrimidine base.